

Abstract

The present invention relates generally to catheters for performing medical procedures including percutaneous transluminal coronary angioplasty. More particularly, the present invention relates to guide catheters, diagnostic catheters and balloon catheters with an improved shaft design. In a preferred embodiment, the present invention includes a catheter shaft comprising an elongate support member having an outer surface, the elongate support member preferably defining a lubricious liner; a first layer disposed over the lubricious liner, a second layer disposed over the first layer, a third layer disposed over the second layer, a fourth layer disposed over the third layer, and a fifth layer disposed over the fourth layer. In preferred embodiments, the first and third layers comprise an ultraviolet-curable epoxy which is cured to desired degrees at select axial locations on the shaft to provide desired stiffness.

**CERTIFICATE UNDER 37 CFR 110:** The undersigned hereby certifies that this paper or papers, as described hereinabove, are being deposited in the United States Postal Service "Express Mail Post Office to Addressee" having an Express Mail Mailing label number of:

EL855120279US

in an envelope addressed to:  
Assistant Commissioner for Patents  
Washington, DC 20231

on this 27<sup>th</sup> day of December 20 01  
Crompton, Seager & Tufte, LLC

By: Kathleen L. Doehling